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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Status of Claims

Claims **1, 5-18, 21-32, 36** and **38-40** are pending.

Claims **1, 5-18, 21-32, 36** and **38-40** have been rejected.

Claims **1, 13, 17, 28, 32,** and **38** have been amended in this submission. Applicants respectfully assert that the amendments to the claims add no new matter.

The Telephone Interview

Applicants wish to thank Examiner Spar, for granting and attending the telephone interview, with Applicants' Representative, Guy Yonay, Reg. No. 52,388 on November 13, 2009. In the interview, claim 1 was discussed, as was the Kuriwaki reference.

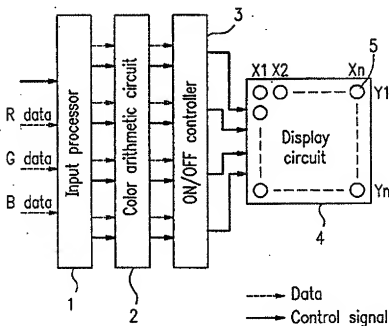
CLAIM REJECTIONS

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1, 5, 10, 11, 13-15, 17, 18, 21, 26-32, 36 and 38-40 under 35 U.S.C. § 102(b), as being anticipated by Kuriwaki et al. (European Patent Publication No. 0 831 451). Applicants respectfully traverse the rejection for at least the below reasons.

The Kuriwaki reference discloses a "display device includes: a light-emitting block including a plurality of light-emitting elements for emitting N number of different basic colors; an input circuit for receiving an input data representing first color, a second color and a third color; a converter for converting the input data into an output data representing N number of basic colors; and a controller for controlling ON/OFF states of the plurality of light-emitting elements according to the output data; N is an integer of 4 or higher." (Abstract). Fig. 1 of the Kuriwaki reference is reproduced below:

FIG. 1



In particular, color arithmetic circuit 2 includes a "color comparator 21, a red data processor 22, a blue-green data processor 23, a yellow-green data processor 24 and a blue data processor 25. The color comparator 21 converts RGB data received by the input processor 1 into data representing a combination ratio of four colors which are to be produced by the LEDs. . . In other words, the color arithmetic circuit 2 has a four-unit structure corresponding to the converted data representing the four colors (i.e., four basic colors)." (p. 4 lines 8-14).

The ON/OFF controller 3 “includes a red data array converter 31, a blue-green data array converter 32, a yellow-green data array converter 33 and a blue data array converter 34. . . The four data array converters 31 to 34 convert the paralleled data of four colors obtained by the color arithmetic circuit 2 into series-strung data, respectively.” (p. 4 lines 15-19).

The Examiner has stated that color arithmetic circuit 2 is a first converter “for converting said image data into intermediate sub-pixel data of four or more primary colors,” and that ON/OFF controller 3 is a second converter “for converting said intermediate sub-pixel data into said converted sub-pixel data, based on at least one display attribute related to said display device and image attributes related to said color image.”

Applicants respectfully disagree. In particular, ON/OFF controller 3 is not a color converter, but merely a parallel-to-serial converter used to convey data representing a combination ratio of four colors which are to be produced by the LEDs to the LEDs in serial binary format. Therefore, the Kuriwaki reference does not disclose a second converter as recited in claim 1.

In addition, claim 1 recites a second converter “for converting said intermediate sub-pixel data into said converted sub-pixel data, based on at least one display attribute related to said display device and image attributes related to said color image.” Thus, even if the ON/OFF controller 3 is a converter (and it is not), the Kuriwaki reference does not disclose conversion of data based on at least one display attribute related to said display device and image attributes related to said color image, as recited in claim 1.

In order to clarify the claim, Applicants have amended the claim element to recite that data for each of said four or more primary colors of said converted sub-pixel data is in gray-level format. In contrast, it is clear that the ON/OFF controller does not output gray-level format data for each primary color, but rather, a string of single-bit ON/OFF data.

Claims 17 and 32 have been amended for clarification in like manner. Accordingly, claims 1, 5, 10, 11, 13-15, 17, 18, 21, 26-32, 36 and 38-40 are allowable over the Kuriwaki reference.

Applicants further wish to point out certain dependent claims that recite claim elements that are independently allowable over the Kuriwaki reference. In particular, claim 1 states that the second converter converts the intermediate sub-pixel data into converted sub-pixel data “based on at least one display attribute related to said display device and image attributes related to said color image.”

The display-attributes may be attributes of the particular display device, rather than merely features of all such displays. Accordingly, claim 13 as amended recites that “said one or more display-attributes comprise at least one attribute selected from the group consisting of a configuration of one or more defective sub-pixel elements within said array, a brightness non-homogeneity of said display device, and a color non-homogeneity of said display device.” The Examiner has pointed to the following portion of the Kuriwaki reference:

In each light-emitting block 5, LEDs are arranged, for example, in a form of a 3x3 lattice as shown in Figure 2A in a point symmetric manner where a blue-green LED BG is placed at the center. In Figure 2A, R, B, YG and BG each represent types of the LEDs. According to the first example, in order to enhance the color reproducibility in the green region, yellow-green LEDs YGs are arranged at the four corners so as to surround the blue-green LED BG. (p. 3 line 56 to p. 4 line 1)

However, this portion does not particularly relate to the ON/OFF controller, or to any “second converter” as required by the claims.

In any event, the Kuriwaki reference does not disclose display-specific conversion, and in particular, a second converter to convert the intermediate sub-pixel data into converted sub-pixel data based on at least one display attribute related to said display device, wherein the display-attributes comprises an attribute selected from a configuration of one or more defective sub-pixel elements within said array, a brightness non-homogeneity of said display device, and a color non-homogeneity of said display device. Accordingly, claim 13 is allowable over the Kuriwaki reference. Claims 28 and 38 are allowable for similar reasons.

The image-attributes may be attributes of the particular image being displayed, rather than merely features of any image. Claim 14 recites that “said one or more image-attributes comprise one or more attributes selected from the group consisting of a perceived bit-depth of

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pixels of at least part of said image, a viewed smoothness of at least part of said image, a brightness uniformity of at least part of said image, a color uniformity of at least part of said image, and a rendering scheme to be applied to at least part of said image.” The Examiner has pointed to the following portion of the Kuriwaki reference:

When data corresponding to the basic colors (RGB data) are input into the LED display device having the above-described structure in the same manner as in the case of the conventional LED display device, a display with excellent color reproducibility can be obtained in the green color region by the light-emitting LEDs of the four colors (R_{LED}, B_{LED}, YG_{LED} and BG_{LED}) in the light-emitting blocks 5. (p. 4 lines 25-28).

However, this portion does not particularly relate to the ON/OFF controller, or to any “second converter” as required by the claims.

Therefore, the Kuriwaki reference does not disclose image-specific conversion, and in particular, a second converter to convert the intermediate sub-pixel data into converted sub-pixel data based on at least one image attribute, wherein the image-attribute comprises one or more attributes selected from the group consisting of a perceived bit-depth of pixels of at least part of said image, a viewed smoothness of at least part of said image, a brightness uniformity of at least part of said image, a color uniformity of at least part of said image, and a rendering scheme to be applied to at least part of said image, as recited in claim 14. Accordingly, claim 14 is allowable over the Kuriwaki reference. Claims 29 and 39 are allowable for similar reasons.

35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 6-8, 12 and 22-24 under 35 U.S.C. § 103(a), as being unpatentable over Kuriwaki et al. (European Patent Publication No. 0 831 451) in view of Kumada et al. (US Patent No. 5,563,725).

In the Office Action, the Examiner rejected claims 9 and 25 under 35 U.S.C. § 103(a), as being unpatentable over Kuriwaki et al. (European Patent Publication No. 0 831 451) in view of Inoue (US Patent No. 5,896,178).

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In the Office Action, the Examiner rejected claim 16 under 35 U.S.C. § 103(a), as being unpatentable over Kuriwaki et al. (European Patent Publication No. 0 831 451) in view of Hirano et al. (International Publication No. WO 01/37249).

None of the Kumada, Inoue, or Hirano references rectify the deficiencies of the Kuriwaki reference, discussed hereinabove. Accordingly, the rejected dependent claims are allowable, at least for depending from allowable base claims.

In view of the foregoing amendments and remarks, Applicants assert that the pending claims are allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,

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